

REMARKS

In the Office Action dated August 7, 2006, pending Claims 1-21 were rejected and the rejection made final. Applicants filed an Amendment After Final, and an Advisory Action then issued in which the rejection was maintained. In response Applicants have filed herewith a Request for Continued Examination and have amended independent Claims 1, 11, and 21. Applicants intend no change in the scope of the claims by the changes made by this amendment. It should be noted these amendments are not in acquiescence of the Office's position on allowability of the claims, but merely to expedite prosecution.

Claims 1-21 were pending in the instant invention at the time of the outstanding Office Action. Of these claims, Claims 1, 11 and 21 are independent claims; the remaining claims are dependent claims. Claims 1, 11, and 21 have been rewritten. All claims stand rejected under 35 U.S.C. § 102(e) as being anticipated Chaudhari et al. (hereinafter "Chaudhari"). The Office is respectfully requested to reconsider the rejections presented in the outstanding Office Action in light of the following remarks.

The Office notes that Chaudhari has a common assignee and inventors with the present application and asserts the applied reference constitutes prior art under 35 U.S.C. § 102(e). Applicants do not now address whether Chaudhari is in fact prior art, but reserve the right to do so.

The instant invention is directed towards a method for systematically adapting classification systems using a much more sparse adaptation data set than previously used

in the art. The instant invention analogizes the classification system as a black box, and analyzes the scores generated by the black box to adapt these scores. The present invention aims to maximize the score levels in its adaptation. The adaptation of the classification system is carried out on the derived functions of the classification system whose values are of lower dimension than the dimension of the system parameter space. Thus, a relatively small amount of data may suffice for an effective adaptation. A novel technique of the instant invention utilizes a nonlinear function of the original acoustic feature space and acts on the level of individual likelihood variables. The adaptation effect is achieved by building smaller statistical models that better capture the relationship between these variables.

As best understood, Chaudhari appears to provide a classification technique, by providing acoustic feature transformations to model the voice print of speakers with the aim of maximizing the likelihood of the speaker training data to the resulting model in the new feature space. Speakers are recognized or classified by appropriately comparing the likelihood of the test data in each transformed feature space and/or by comparing transformation matrices obtained during speaker enrollment and testing. (Column 2, lines 13-25) The model is adapted using the training data that is parameterized by the maximum likelihood estimates of mean vector, covariance matrix, and component weight. (Column 4, lines 30-49). This is in stark contrast to the instant invention.

Unlike the instant invention, Chaudhari adapts feature spaces and relies on maximum likelihood levels to provide a classification technique. The instant invention adapts a classification system by relying on score levels obtained from the classification

system. The discriminant function brought to the attention of Applicant by the Office is used in the adaptation of the feature space, not in the adaptation of a classification system. There is no suggestion or teaching of adapting such a function, or adapting any derived function of the classification system, in conjunction with the adaptation of a classification system.

Further, there is no teaching or suggestion in Chaudhari of, *inter alia*, utilizing more than one class of Gaussian mixture models. In fact, Chaudhari fails to mention more than one class of a Gaussian mixture model, let alone utilizing more than one class of Gaussian mixture models. Thus, Chaudhari fails to teach or suggest this element of the instant invention.

As Chaudhari fails to teach utilizing more than one class of Gaussian mixture models, it is thus obvious that Chaudhari would also fail to teach or suggest selecting a model set from a global model. Chaudhari also fails to teach an adaptation that utilizes a multidimensional space that is based upon the selected model set. There is no mention in the entire disclosure of Chaudhari of a multidimensional space, let alone such a space that is utilized for adaptation.

Applicants present, *inter alia*, a method of “utilizing Gaussian mixture models that represent both a target model and a global model; adapting the classification system via adapting the at least one derived function of the classification system; and selecting a model set from the global model set that includes more than one Gaussian mixture model; wherein the adaptation utilizes a multidimensional space that is based upon the selected

model set.”. (Claim 1) Similar language appears in all of the independent claims. As asserted above, there is no teaching or suggestion in Chaudhari of utilizing more than one class of Gaussian mixture model. Further, a model set is selected from this global model set and is utilized in the adaptation of the classification system.

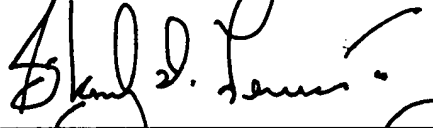
It is respectfully submitted that the applied art clearly falls short of present invention in that the applied art does not disclose or suggest “utilizing Gaussian mixture models that represent both a target model and a global model; adapting the classification system via adapting the at least one derived function of the classification system; and selecting a model set from the global model set that includes more than one Gaussian mixture model; wherein the adaptation utilizes a multidimensional space that is based upon the selected model set”. Accordingly, Applicant respectfully submits that the applied art does not anticipate the present invention because, at the very least, “[a]nticipation requires the disclosure in a single prior art reference of each element of the claim under construction.” W.L. Gore & Associates, Inc. v. Garlock, 721 F.2d 1540, 1554 (Fed. Cir. 1983); see also In re Marshall, 198 U.S.P.Q. 344, 346 (C.C.P.A. 1978).

In view of the foregoing, it is respectfully submitted that Claims 1, 11, and 21 fully distinguish over the applied art and are thus in condition for allowance. By virtue of dependence from what are believed to be allowable independent Claims 1 and 11, it is respectfully submitted that Claims 2-9, and 12-20 are also presently allowable.

In summary, it is respectfully submitted that the instant application, including Claims 1-21, is presently in condition for allowance. Notice to the effect is earnestly

solicited. If there are any further issues in this application, the Examiner is invited to
contact the undersigned at the telephone number listed below.

Respectfully submitted,



Stanley D. Ference III
Registration No. 33,879

Customer No. 35195
FERENCE & ASSOCIATES
409 Broad Street
Pittsburgh, Pennsylvania 15143
(412) 741-8400
(412) 741-9292 - Facsimile

Attorneys for Applicants